

A Revision of the genus *Machaeridia* (Orth. Acridoidea).

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Stål (1873) erected the genus *Machaeridia* to include a new species *bilineata*, described from a single female. Since then four other species have been added to the genus, *conspersa* I. Bolívar, 1889, *coerulans* Karny, 1907, *congonica* Sjöstedt, 1931 and *fragilis* Sjöstedt, 1931.

Bolívar (1908) erected the genus *Wilverthia* to include a new species *acuminata*, also described from a single female. Two species have since been added to this genus, *lundgreni* Sjöstedt, 1931 and *ugandana* Uvarov, 1938; the former has since been synonymised by Uvarov (1953) with *acuminata*.

Dirsh (1961) synonymised *Wilverthia* with *Machaeridia*, considering that the differences between the two type species *acuminata* and *bilineata* were variable and not of generic value.

The present author has examined all the available types (the types of *coerulans* Karny and *conspersa* I. Bolívar are missing, believed lost) and about seven hundred specimens and agrees with published synonymy. Furthermore *coerulans*, *congonica* and *fragilis* are here synonymised with *bilineata*, and *acuminata* and *ugandana* with *conspersa*. The genus *Machaeridia* now includes only two species, *bilineata* and *conspersa*, and is redescribed and discussed below.

Machaeridia Stål.

Machaeridia Stål, 1873: 90, 100.

Wilverthia I. Bolívar, 1908: 96 (Dirsh, 1961: 394).

Of medium size, slender. Integument finely rugose and pitted.

Antennae ensiform, with serrated external margin in basal half, about as long as head and pronotum together. Head much longer than wide, acutely conical; fastigium of vertex elongate, parabolic, shorter than longest diameter of eye; fastigial foveolae absent; frons slightly incurved; frontal ridge narrow, widening apically and more so basally, deeply sulcate along whole length, with well developed lateral carinulae. Dorsum of pronotum weakly tectiform, carinae well developed, lateral carinae normally straight and parallel; whole dorsum smooth, crossed only by posterior sulcus, metazona much shorter than prozona; posterior margin widely obtuse angular, almost rounded. Prosternum with slightly raised collar. Mesosternal interspace open but constricted. Elytra and wings fully developed; elytra with dense reticulation and venation, intercalary vein of medial area present. Hind femur narrow, exceeding tip of abdomen; upper internal lobe of hind knee longer than external, with sub-acute apex; lower lobes of equal length, both with acute apices. Arolium large. Supra-anal plate elongate-angular. Cercus acutely conical. Male sub-genital plate acutely conical, normally short but sometimes with tip attenuate. Epiphallus with narrow bridge, without ancoral lobes and with bilobate lophi. Ovipositor slender with curved apices. Spermatheca with a sac-like pre-apical and a short simple apical diverticulum.

Type species: *Machaeridia bilineata* Stål, 1873.

The genus belongs to the group *Pargi* of the sub-family Acridinae and may be distinguished from other members of this group by having fully developed elytra and wings, the former with dense venation and reticulation, the latter without a speculum; the pronotum without longitudinal ridges dorsally; and a serrated external margin of the antenna.

The genus contains two species which may be separated as follows:

1. (2). Hind femur narrow, at least eight times as long as wide; head much longer than deep, fastigium always longer than wide; elytron narrow, always more than nine times as long as wide, with an elongate acute apex, wing relatively narrow, hyaline or blue basally ... *bilineata* Stål.
2. (1). Hind femur widened basally, not more than six and half times as long as wide; head about as long as deep, fastigium of vertex as long as broad; elytron broader, about seven and a half times as long as wide, with less acute apex; wing broader, hyaline or yellow basally *conspersa* I. Bolívar.

Machaeridia bilineata Stål.

(Figs. 1-9.)

Machaeridia bilineata Stål, 1873: 90, 100.*Machaeridia coerulans* Karny, 1907: 371; *syn. n.**Machaeridia congonica* Sjöstedt, 1931: 6, pl. 1, figs. 4 a, 4 b; *syn. n.**Machaeridia fragilis* Sjöstedt, 1931: 7, pl. 1, figs. 5 a, 5 b; *syn. n.*

Type locality: Sierra Leone, 1 ♀.

Redescription: ♂. Body slender. Antenna with flagellum consisting of 16-17 segments of which the first 7-8 are flattened and widened. Fastigium of vertex always longer than wide, concave, parabolic but sometimes parallel-sided. Head elongate, always much longer than deep. Frontal ridge widening basally and apically. Pronotum about as long as head dorsally, lateral carinae well developed, parallel, crossed only by posterior sulcus which is strongly excurved to posterior margin of pronotum; lateral plates of pronotum trapezoid. Prosternal collar low. Mesosternal interspace constricted medially, longer than wide. Elytron very narrow, always more than nine times as long as wide and with an elongate, acute apex. Wing narrow, hyaline, basal disc sometimes with bluish tinge; in dark specimens apex may be darkened. Hind femur very narrow, at least eight times as long as wide. Sub-genital plate conical, varying slightly in length but always longer than deep. Phallic complex as in figs. 5-9; basal valves of penis slightly recurved anteriorly. Para ♀. As ♂, but larger.

Length (mm.): Body, ♂ 21.4-24.4, ♀ 25.3-29.7; pronotum, ♂ 3.5-4.6, ♀ 4.2-5.5; elytron, ♂ 18.0-23.2, ♀ 19.8-26.4; hind femur, ♂ 13.4-15.5, ♀ 15.6-19.5.

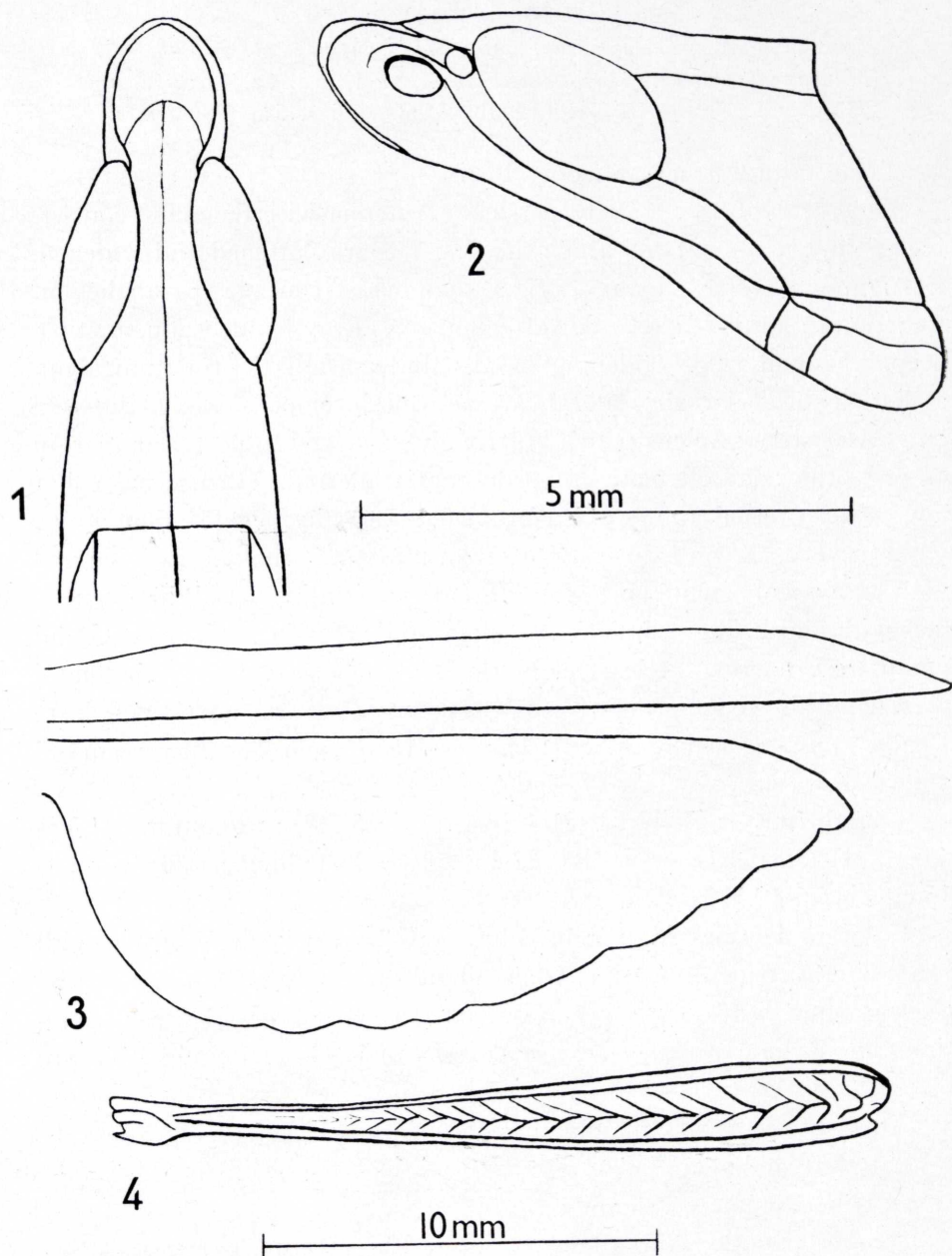
Coloration varies from light ochraceous brown to dark brown with black lateral stripes extending from behind eyes to midway along elytra; elytron often bears a yellow or green stripe along costal area; sometimes in darker specimens external discs of hind femur and tibia are black.

This species varies mainly in size, coloration, length of male sub-genital plate and shape of fastigium of vertex.

Distribution known to author:

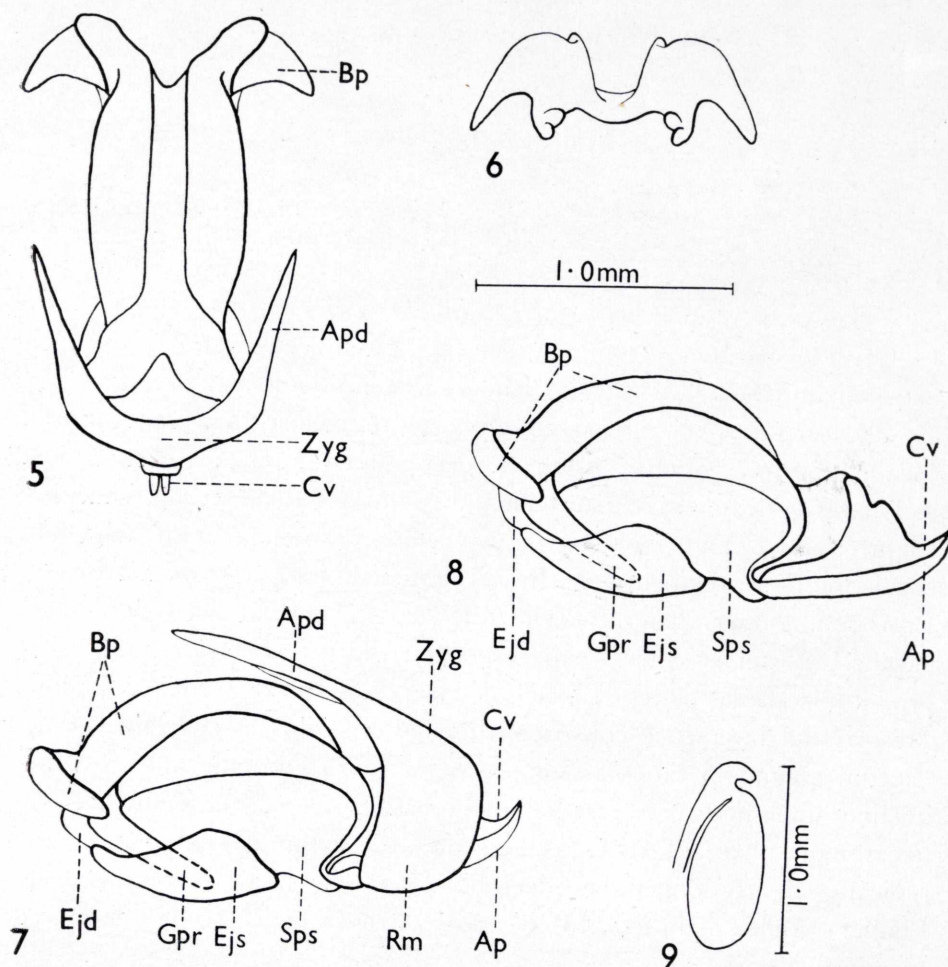
Angola: Dundo, Alto Cuilo, Caunula, River Luita, Cohemba (Bié), River Langiliko (Moxico), Bungo; *Burundi*: Ruyigi; *Congo*: Aru, Lubudi River, Luembe, Maseki (Ruwenzori); *Congo Republic*: Braz-

zaville (type locality of '*congonica*' and '*fragilis*'); *Ethiopia*: Sire, Soddu-Borodda; *Ghana*: Ajena, Damongo, Gamboga, Ifaks, Kpandai, Nagbog, Odupong, Ofankor, Shai Hills; *Liberia*: Nimba Mts; *Mali*: Funa,



Figs. 1-4.—*Machaeridia bilineata* Stål. Male; 1) head, dorsal view; 2) same, lateral view; 3) elytron and wing; 4) hind femur, lateral view.

Macina, Madina, Ouro Ndia, San; *Nigeria*: Akwanga, Azare, Matyoro lakes (Gombe) Udabo (Bauchi); *N. Rhodesia*: Mweru swamp; *Sudan*: Mongalla (type locality of *coerulans* Karny; the type specimen is miss-



Figs. 5-9.—*Machaeridia bilineata* Stål.; 5) phallic complex, dorsal view, ectophallic membrane and epiphallus removed; 6) epiphallus; 7) phallic complex, lateral view, ectophallic membrane and epiphallus removed; 8) endophallus, lateral view; 9) spermatheca. (*Ap*, apical valves of penis; *Apd*, apodeme; *Bp*, basal valves of penis; *Cv*, valves of cingulum; *Ejd*, ejaculatory duct; *Ejs*, ejaculatory sac; *Gpr*, gonopore process; *Rm*, rami of cingulum; *Sps*, spermatophore; *Zyg*, Zygoma.)

ing but there is 1 ♀ from this locality in the British Museum (Natural History)); *Tanganyika*: Kahama Dstr., Kigoma, Malagarassi, Rukwa Valley, Tabora; *Uganda*: Bugoma forest, Kepeka, Entebbe, Tororo; *Sierra Leone*: Freetown, Kabala.

249 specimens examined.

Recorded distribution unknown to author: Burr (1900) records this species from a battered nymph from Somaliland.

***Machaeridia conspersa* I. Bolívar.**

(Figs. 10-18.)

Machaeridia conspersa I. Bolívar, 1889: 95.

Wilverthia acuminata I. Bolívar, 1908: 97; *syn. n.*

Wilverthia lundgreni Sjöstedt, 1931: 8, figs. 6 a, 6 b (Uvarov, 1953: 157).

Wilverthia ugandana Uvarov, 1938: 152, fig. 1; *syn. n.*

Type locality: Lorenzo Marques, 1 ♀ (lost).

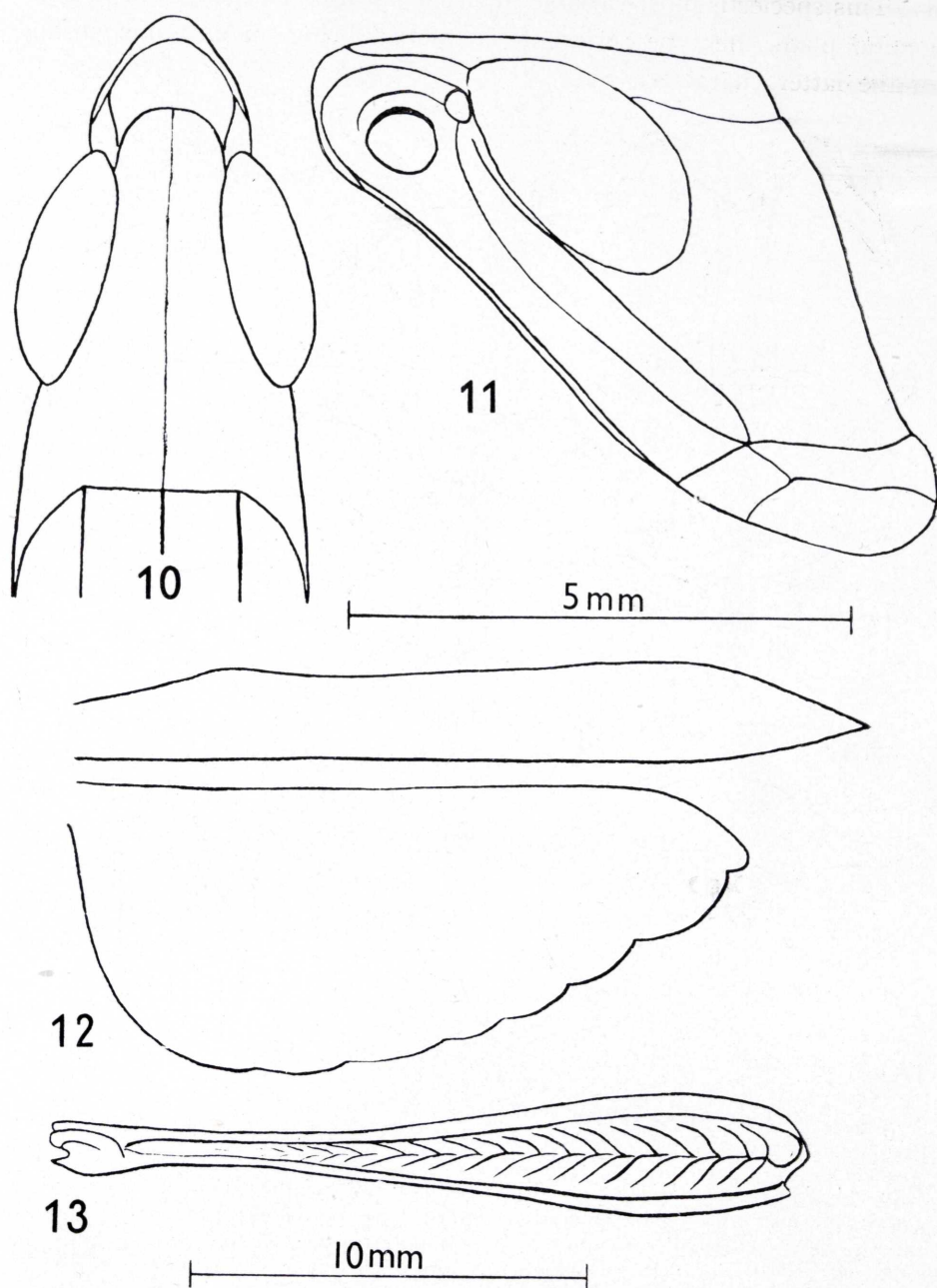
Several specimens from South Africa have been examined, as well as a female from Salisbury, S. Rhodesia, identified by I. Bolívar.

Redescription: ♂. Body slightly more robust than in *bilineata*. Head, in profile, about as long as deep. Fastigium of vertex almost as long as wide, concave, parabolic. Frontal carinulae strong, widening slightly above and more strongly below. Antenna with flagellum consisting of 16 segments, the first 7 flattened and gradually narrowing. Pronotum longer than head dorsally; lateral carinae well developed, parallel; posterior sulcus narrow, excurved to posterior margin of pronotum; lateral plates of pronotum trapezoid. Prosternal collar low. Mesosternal interspace constricted medially, slightly longer than wide. Elytron about 7.5 times as long as wide, with an acute apex. Wing hyaline, sometimes very pale yellow on basal disc. Hind femur narrow, never more than 6.5 times as long as wide. Sub-genital plate acute, typically slightly longer than deep but often over twice as long as deep. Phallic complex as in figs. 14-18; basal valves of penis strongly recurved anteriorly.

♀. As ♂, but larger and relatively more robust.

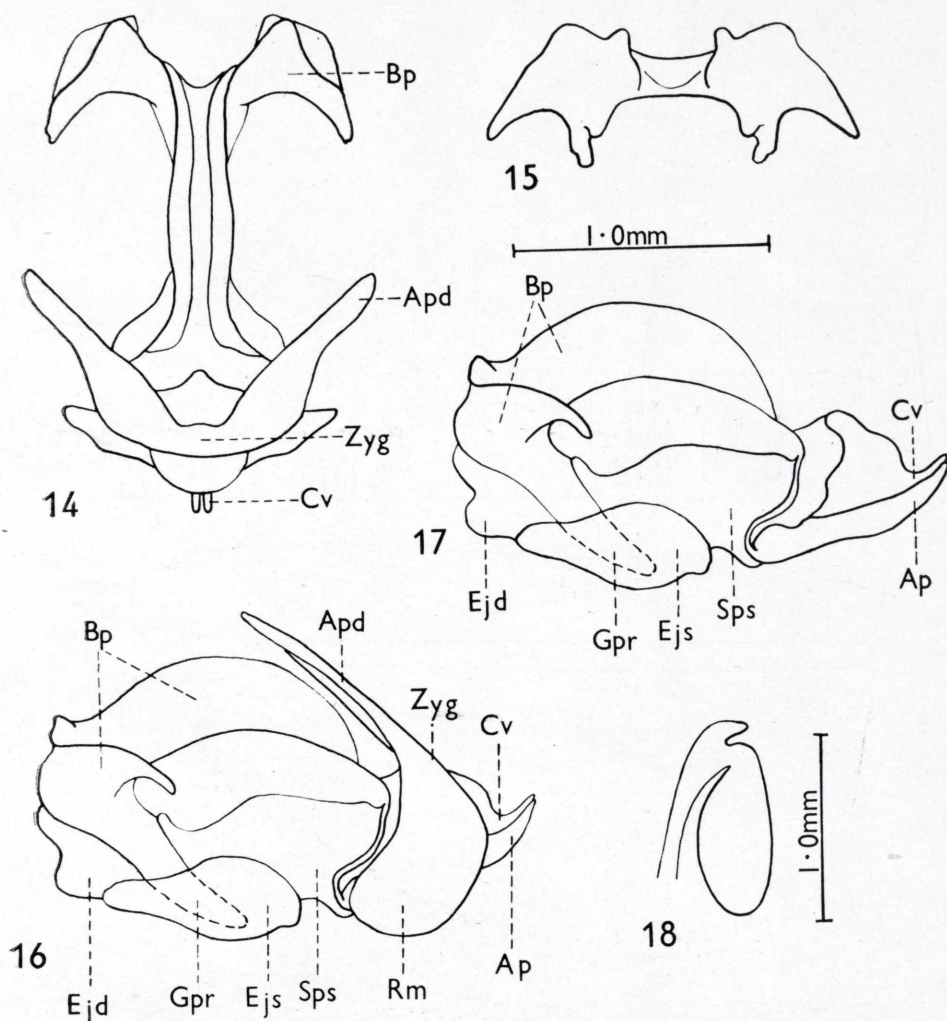
Length (mm.): Body, ♂ 21.0-24.2, ♀ 23.7-32.8; pronotum, ♂ 3.5-4.5, ♀ 4.3-5.9; elytron, ♂ 18.7-21.0, ♀ 21.3-26.9; hind femur, ♂ 13.3-14.9, ♀ 15.2-19.5.

Coloration varies greatly, from completely light brown through mottled brown to fawn with dark brown bands beginning behind eyes and extending along lateral plate of pronotum, just below lateral carinae, to midway along elytron. Sometimes with a pale stripe running dorsally along head and pronotum and extending along costal area of elytron.



Figs. 10-13.—*Machaeridia conspersa* I. Bolívar. Male; 10) head, dorsal view; 11) same, lateral view; 12) elytron and wing; 13) hind femur, lateral view.

This species is most variable in size, coloration and length of ♂ subgenital plate, the type series of '*ugandana*' being an extreme variant of the latter character.

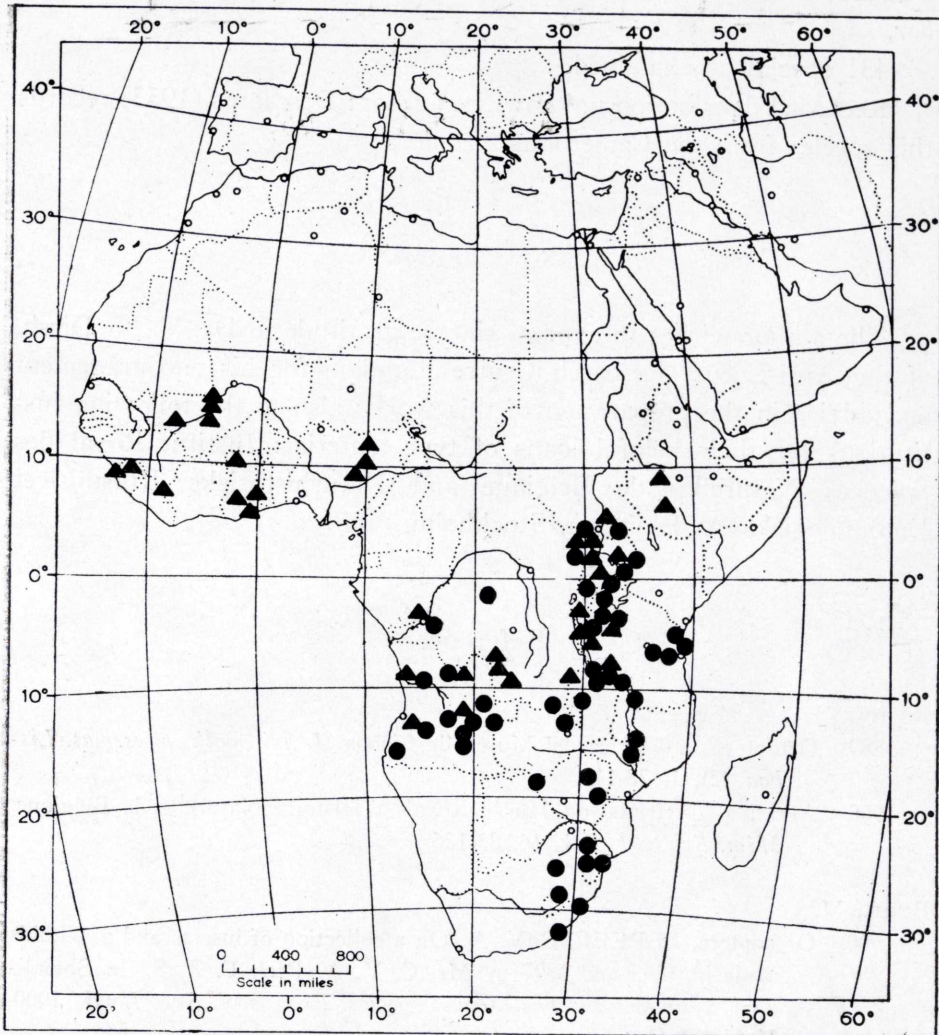


Figs. 14-18.—*Machaeridia conspersa* I. Bolívar; 14) phallic complex, dorsal view, ectophallic membrane and epiphallus removed; 15) epiphallus; 16) phallic complex, lateral view, ectophallic membrane and epiphallus removed; 17) endophallus, lateral view; 18) spermatheca (abbreviations as in figs. 5-9).

Distribution known to author:

Angola: Caungula, Dundo, Villa Luso, Alto Chicapa, Alto Cuilo, R. Lumeji (Moxico), middle and upper Luena river (Moxico), R. Lungue-Bungo (Moxico), Luchazi territory, Sambo, Sa-da-Bandeira (Hui-

Ia), Cohemba (Bié); *Burundi*: Ruyigi; *Congo*: Sakania, Tenke, Jadotville, Kasenye, Aru, Lula, Leopoldville (type locality of *acuminata*); *Congo Republic*: Boko-Kinkala (type locality of *lundgreni*); *Kenya*:



Map. 1.—Distribution of *Machaeridia* spp.; black triangle, *M. bilineata* Stål.; black circle, *M. conspersa* I. Bolívar.

Mt. Elgon, Kitali; *Mozambique*: Lorenzo Marques; *N. Rhodesia*: Lake Bangweulu Abercorn; *Nyasaland*: Blantyre, Zomba, Fort Johnston; *S. Africa*: Transvaal; Barberston, Johannesburg, Swaziland; Mbabane. Natal; Bothas Hill, Kloof, Natal National Park. Cape Province; Port St. John; *S. Rhodesia*: Odzi Distr., Salisbury, Victoria

Falls; *Tanganyika*: Songea, Tukuyu, Rukwa Valley, Ufipa plains, Old Shinyanga, Shinyanga, Kahama Distr., Muheza, Bukoba, Itymbya, Morogoro, Uluguru Mts., Singida Distr., Mpwapwa, Korogwe, Tanga; *Uganda*: Entebbe, Mwera, Ankole, Kepeka, Kabula, Tororo; *Zanzibar*.

431 specimens examined.

Recorded distribution unknown to author: Descamps (1953) records this species from the Cameroons.

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